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Here comes the sun: The bright side of solar energy

By Bob Karlovits
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Joe Morinville says a "perfect storm" is brewing for acceptance of solar energy in Western Pennsylvania.

He is the owner of Energy Independent Solutions, a Robinson company that installs the modules that capture sunlight for photovoltaic energy.

"Solar energy is not a panacea, but it is an important piece in the energy-solution puzzle," says Rich Rothhaar, director of business development for Conservation Consultants Inc. on the South Side.

That agency, which helps low-income people with energy problems, practices what he preaches. Three arrays made up of 52 modules on the rooftop capture light for electric power and one single panel is devoted to generating hot water.

State and federal programs give some financial help for installation of solar equipment, leading more residents and business owners to think about solar projects even on one of this area's typical gray afternoons.

Solar solutions are showing up in a number of ways.

- Phil Salvato, an artist and owner of the 3rd Street Gallery in Carnegie, heats his house and studio as well as its water with a solar system. "When the sun comes out, I'm happy because I'm getting free heat," he says. "I wish every house in the United States would do this."
- Tony Rossi has transformed his 33-year-old Bridgeville electric and heating-and-ventilation firm into Adam Solar Resources, which specializes in solar hot water projects. "This is the future," he says of the reason for the change.
- Frederic C. Underwood II, a city fireman, is owner-founder of Under Solar Future LLC. The firm is in the process of putting together a \$1.2 million solar-power project, its first, for a Lycoming County business.
- Solar Power Industries has become an \$84 million-a-year industry making photo-voltaic plates and solar sub-components, says Robert P. Stoehr, manager of photovoltaic systems for the Rostraver firm.

Taking a brighter outlook

Stephen Lee, head of the School of Architecture at Carnegie Mellon University

in Oakland, says it is not difficult to see how solar power can work in this area.

"We have had a solar array generating power here since 2006," he says. "It works every day without any maintenance."

Underwood, Lee, Rossi and Morinville all say a bright sun is not necessary to produce solar energy

On a dimly gray, snowy afternoon, Adam Rossi, son of Tony Rossi, stands in the Bridgeville headquarters of Adam Solar Resources and says, "The tubes are producing 100-degree water right now."

His firm specializes in the use of tubes that capture sunlight and heat cylinders at the top of which water is pumped to be heated.

Radiation, which is there, sunshine or no, is the key.

"You could put a solar array on the North Pole and it will work," Lee says.

This is just the first year for Salvato's system, but he has seen it working every day, despite the gray.

He uses a Adam Solar Resources-installed system to generate radiant energy, which heats the floors with hot water pumped through pipes below. Salvato is not able to do all of his heating that way, but his heating bill for December dropped from \$400 to \$500 in 2008 to about \$145 in 2009, he says.

"And I had it up at about 72 degrees," he says of heating his 2,400-square-foot building with ceilings that can go as high as 15 feet.

Rothhaar and Stoehr are quick to point out photovoltaic projects generally are not going to provide all of the energy needed in a building. For instance, Rothhaar says the three arrays on the roof of Conservation Consultants provide about 10 percent of the power the organization uses.

But it wins financial credit for the power it makes and doesn't use through a process called "net metering." Through that, utilities credit solar producers for energy put back into the power grid.

Giving power to an idea

Those are the sort of issues a residential or business owner should consider if thinking about an installation, the solar professionals remind.

"If you are going to stay in the house, you can end up making money," Underwood suggests.

For example, the hot-water-radiant-heat project in Salvato's home-gallery cost about \$24,000, Rossi says. That is higher than the \$8,000 to \$10,000 estimate for a hot water project alone because it includes the under-floor system.

But, Rossi says, tax credits and rebates can take care of about 60 percent of that cost, and that doesn't mention savings through reduced bills.

Underwood suggests the payback time for one of his systems, which can cost from \$35,000 to \$110,000 for a home, is four to six years. Morinville estimates payback in five years.

Those payback estimates are created greatly by credits and rebates offered for solar jobs.

There is a 30 percent tax credit from the federal government and up to a 35 percent rebate from a state program known as the PA Sunshine Solar Program.

Pennsylvania, like other states, also has a program through which utilities are mandated to support clean energy production either by creating it themselves or supporting other production put back into the grid.

In that program, a company or resident can get a credit, currently about \$250 a year, for each megawatt produced.

Stoehr suggests a homeowner could produce 3 or 4 megawatts a year, bringing in \$750. That payment, added to the state rebate and federal tax credit, make solar projects more reasonable, the energy professionals say.

"The incentives are making it cheaper," Underwood says.

TRAINING SOLAR WORKERS

Community College of Allegheny County has begun a program to train installers of solar modules in an effort to "conserve and be part of the solution," says Judy Savolskis, interim vice president for work-force development.

She says the program works in two directions.

It is part of the school's "green initiative" dealing with matters of renewable energy sources. But it also is part of an effort to make students and workers capable of getting "green" jobs by retooling them for newer tasks.

The solar panel program is being done with Local 95 of the International Union of Operating Engineers, which also is part of the college's attempt to use "third parties" in its training programs.

In a similar way, Joe Morinville, owner of Energy Independent Solutions in Robinson, is involved in a program at the Pittsburgh Job Corps Center in the East End, which will create a usable photovoltaic project as well as teaching students how to work with solar equipment.

Solar Power Industries goes beyond its manufacturing role and offers courses for photovoltaic installers at its Rostraver site, says Robert P. Stoehr, manager or photovoltaic systems.

Stephen Lee, head of the School of Architecture at Carnegie Mellon University, says the university's approach to matters of renewable energy sometimes puzzles people.

"They look and see no course like Energy-Saving 101 and they wonder where we are," he says.

That's because issues of sustainability and renewability are handled in a broader manner. Programs in architecture, civil engineering and public policy all are rooted in sustainable design and urban design, he says.

All of those programs operate under the Steinbrenner Institute for Environmental Education and Research, a program set up to guide learning on such issues.

Bob Karlovits can be reached at bkarlovits@tribweb.com or 412-320-7852.

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